A COMPARISON OF A FOODS CURRICULUM WITH THE FOOD PRACTICES OF A SELECTED GROUP OF HIGH SCHOOL GIRLS AT MCCUNE, KANSAS

by

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B. S., Kansas State Teachers College, Pittsburg, 1928

A THESIS

submitted in partial fulfillment of the
requirements for the degree of

MASTER OF SCIENCE

Department of General Home Economics

KANSAS STATE COLLEGE
OF AGRICULTURE AND APPLIED SCIENCE

1942

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TABLE OF CONTENTS

INTRODUCTION 1
REVIEW OF LITERATURE 2
METHODS OF PROCEDURE 6
OUTLINE OF THE CURRICULUM IN FOODS 7
FINDINGS 11
SUMMARY 49
ACKNOWLEDGMENT 52
LITERATURE CITED 53
APPENDIX 55

INTRODUCTION

McCune is a small third class Kansas town in the western part of Crawford County. The town is a trading center for the community and nearby farms for here are located three grocery stores, a small dry goods store, bank, drug, variety, and hardware stores, produce houses and a grain elevator. General farming is followed by most of the farmers though a few are using diversified practices to improve their economic status.

The rural high school located in McCune serves a district about 10 miles square; three school buses bring in approximately two-thirds of the 150 high school pupils. The program of studies is characteristic of that of most small high schools in Kansas. It includes commerce, music, English, history, sciences, mathematics, vocational agriculture and vocational homemaking. Offered first in the fall of 1936, the interest in vocational homemaking has increased until now a large majority of the girls enroll for one or more years in this department. In the first two years of the program, the class periods are 120 minutes in length and the instruction includes both home economics and related subjects. The third year has only 60 minute class periods and omits the related subjects. A two-semester course in home economics with 60 minute class periods is also offered for boys. All areas of home economics--foods, clothing, and home living--are represented in the program.

The foods area is an important part of the homemaking program as approximately 35 to 40 per cent of the time is devoted to it. The curriculum in foods is broad in aspect and treats of such phases as nutrition, meal planning, preparation and service, food selection and purchasing, food preservation, care and storage of food, and foods equipment. One of the main goals is improvement in the food practices of the girls and their families. Therefore, the instruction in foods is planned specifically to this end. However, evaluation of the progress made toward this objective is not easily done for pupils' knowledge of foods may not always be an indication of their practices. Recent widespread interest in nutrition has again focused attention upon this situation and the possible need for changes in high school foods curriculums. This study was made to ascertain the food practices of the girls in McCune Rural High School, to investigate the effectiveness of the foods curriculum as shown by these practices, and to make recommendations for improvement of the curriculum in foods as indicated by the findings.

REVIEW OF LITERATURE

The review of literature disclosed that for some time there has been an interest in food habits and other food practices of various groups of people. Recently this has been directed toward a consideration of the extent to which the teaching of foods has influenced the food habits and other food practices of those receiving such instruction. As a result a number of studies along this line have been made. Those which had specific relationship to this study were briefly reviewed.

Johnson (1928) investigated the diet and health habits of 54 girls in a Kansas junior high school and checked their physical health and gains in weight. The results showed that the diets in general were poor, especially lacking in milk, whole grain cereals, and vegetables. There was sufficient meat in the menus and the use of potatoes was considered generous. Most of the girls ate between meals at least once a day. None of the diets were found to be good; one-third of them were fair and the rest were poor.

A dietary study of 480 eleventh and twelfth grade girls in Kentucky was made by Botto (1934) who found that two-thirds of the group had some instruction in home economics, the remainder none. She found no striking differences in the diets of the two groups nor any indications that home economics had been effective in modifying their food practices.

Brassfield (1934) experimented at Ohio State University in the teaching of nutrition to improve the food habits of a group of elementary grade pupils and one of college students. She decided that as a result of the teaching, the pupils and students improved their food habits, made better choices of foods, and developed better attitudes toward foods. She also said that fundamental principles of nutrition were more easily taught and less difficult to learn when there was an opportunity to make practical application of theory.

Albright (1939) reported on a study made with high school girls in the University School at Ohio State University on the values from home economics instruction. Her data were obtained from parents by means of letters. She concluded there was some application from home economics instruction in the girls' home life especially in progress made in skills and understandings, and in development of appreciation, cooperation and broadening interests.

The food and health habits of 100 high school girls were investigated by Grace (1939). Fifty of the girls had received no instruction in home economics and the others had two years of this subject. Her objective was to determine whether or not the class room instruction had any influence on the health of the girls. Questionnaires and dietary studies were the sources of her data. The food habits of the girls who had taken home economics were better than those of the girls who had not, except in the amount of milk, fat, and oils consumed. She recommended that the girls in both groups eat better balanced lunches and drink at least one quart of milk per day.

Lehman (1939) studied the activities of a group of homemakers in Kansas with reference to foods to obtain information that would aid in improving the foods curriculum in the secondary schools. In her recommendations, she suggested that emphasis be placed on the foods course on nutrition; planning, preparing and serving family and company meals; food selection and purchasing; food preservation; and selection, use and repair of equipment related to foods.

A survey of the dietary habits of high school pupils in Tennessee was made by Reynolds (1939) to find the relation of diet to growth as indicated by weight for height and age. This was done by means of questionnaires and dietary studies. The results revealed that 93.2 per cent of the diets were poor, having a score of 70 or below. The girls who were pupils in second year home economics classes had slightly higher mean scores than did the boys who were enrolled in biology. More than half the pupils received an optimum score for use of the protein foods. The next best feature of the diets was the high intake of vegetables. Forty per cent of all pupils used one pint or more milk daily. Thirty-five per cent reported the use of no fruit and nearly one-half drank less than six glasses of water daily.

Whitten (1939) studied the effect of home economics instruction in foods upon the food habits of a group of Kansas high school girls by means of check lists, food intake and menu records, and score cards to see if there had been application in the actual home living of the girls. She found that the food habits of all showed some improvement, more being made among the freshmen than the sophomores. However, the improvement was somewhat limited. The food intake of the girls was especially deficient in the protective foods.

Cooprider (1940) made a study of the dietary habits of selected groups of Kansas high school girls and college women to determine if home economics made any change in the food habits of the girls and women. Dietary check sheets were given out at the first and close of the year to all girls and women in the study. She checked and compared the occurrence of protective foods in the diets. The high school girls used more eggs, but less water and milk than did the women. They also ate fewer total vegetables, citrus fruits and tomatoes, whole grain products, meat, fish and poultry. The girls likewise ate less between meals and drank smaller amounts of coffee, tea and coca cola. The upper class women, however, rated superior in their food habits to those of under class ranking, in their use of milk, vegetables, whole grain products and eggs. The study indicated that improvement in dietary practices was made with the increase in knowledge of health, habits and nutrition.

METHODS OF PROCEDURE

The data were obtained by means of check lists, records of foods eaten and menu plans (Appendix) from 56 girls enrolled in McCune Rural High School.

Each girl filled out the check list, and planned a day's menu for herself during the first week of school in the fall of 1941. At the same time she kept account of her food intake for the week. In January after being enrolled in foods for one semester, the freshmen girls kept a seven day food record and planned a day's menu. This same procedure was followed by this group again in May. The sophomore girls enrolled in foods kept a seven day food record and planned a day's menu at the end of the course in May.

The curriculum in foods for the 1941-1942 term was planned and outlined in detail before the beginning of the school year and served as a guide for the teaching of the foods courses.

The data obtained from the check lists, food records and menu plans were tabulated and analyzed. A score card (Appendix) was used to interpret the food habits of the girls. The findings were compared with the outline of the foods curriculum and recommendations made as they appeared to be indicated.

OUTLINE OF THE CURRICULUM IN FOODS

McCune Rural High School 1941 - 1942

The outline of the curriculum in foods as made before school began in the fall was used as a guide for teaching the foods courses during the year. It was based on the curriculum in foods that had been adopted two years previously. As deviations from the planned outline occurred, the changes made were incorporated in the outline, so that the following one presents the subject matter taught during 1941 and 1942 in the McCune Rural High School.

I. Getting acquainted with the kitchen - - - 1 week
    1. Convenient placement of family utensils
        Small equipment
        Cooking utensils
        Serving silver, china, glassware
    2. Location of general supplies
    3. Use and care of general equipment
        Utensils
        Stoves
        Refrigerators
        Table tops
    4. Home tests
        Oven temperatures
        Measuring devices

II. Breakfast - - - - - - - - - - - - - - - 6 weeks
    1. Importance of daily breakfast meal
    2. Meaning of well-balanced meal
    3. Foods needed each day
    4. Meaning of protective foods
    5. Breakfast foods
        Bacon, eggs, cereal, fruit, breads,
            beverages

6. Fruit for breakfast
    - Value in diet
    - Variations in serving it
        - Fresh, dried, cooked
7. Milk
    - Value to old and young
    - Forms: whole, dry, canned, evaporated, condensed
    - Ways of using milk other than as a beverage
    - Care in handling
        - Cleanliness, cold, pasteurization
8. Cereals
    - Value of whole grain products
    - Ready-to-eat or uncooked
    - Principles of cooking
    - Bulk cereals or packaged cereals
    - Serving cereals to appeal to the family
    - Combining with other foods
9. Breakfast breads
    - Kinds - toast, muffin, biscuit, waffles, griddle cakes and variations of these
    - Methods of preparing each
10. Breakfast meats or substitutes
    - Eggs
        - Value in diet
        - Variations in preparation
            - Creamed, on toast, in combination with other foods
        - Care of in the home
    - Other breakfast meats and their preparation
        - Bacon, dried beef, sausage

III. Luncheon or supper - - - - - - - - - - 8 weeks

1. Characteristics of meal
    - Types of luncheon meal
    - Types of service: family style or cafeteria
2. Vegetables
    - Why needed in diet
    - Methods of cooking various kinds
        - Preservation of minerals and vitamins
        - Effect of heat, soda, surplus amount of water on food values
    - Meaning of au gratin, scalloped, glazed, stuffed, sauted, baked, creamed
    - Classification and value of each
        - Green, starchy
        - Mild, strong
    - Caring for same in home
    - Buying guides
3. Salads
    - Value in diet
    - Characteristics of a good salad
        - Neatness, freshness, cold

- Terms: marinate, mayonnaise, dressing
- Inexpensive recipes

4. Hot dish
    - Value in meal
    - Foods to use: cheese, eggs, left-over meats, fish, with rice, spaghetti, macaroni
    - Use of left-overs in souffles, creamed dishes, croquettes, gumbos, casseroles, fritters
5. School lunch
    - Value of well-balanced lunch
    - Foods to pack in lunch box
        - Sandwiches (variations) fruits, vegetables, cookies, or cake, beverages
    - Packing of lunch
6. Desserts
    - Kinds: custards, puddings, gelatin desserts, cookies
    - Place in diet
        - Ways of using milk, fruit
7. Planning and preparing family suppers

IV. Meal planning - - - - - - - - - - - - - 3 weeks

1. What food does for us
    - Provides heat and energy--examples of food
    - Aids in growth and repair--examples of food
    - Regulates and protects body--examples of food
2. Amount of food needed by various members of family
3. Protective foods
    - Recognition of same
    - Amount needed daily
    - How they may be included in the diet
    - Planning and preparing balanced meals

V. Meal service and table etiquette - - - - 6 weeks

1. Kinds of meal service
    - Characteristics of each
    - Family service and variations
    - Russian
    - Compromise
2. Attractive tables
    - Cleanliness, neatness of arrangement
        - Care in setting table
    - Setting table for various types of service
3. Table etiquette
    - Responsibility of hostess, host, guest
    - Reason for practicing table manners at home
    - Table manners

VI. Dinner - - - - - - - - - - - - - - - 6 weeks
- 1. Characteristics
- 2. Soups
  - Kinds
  - How served
- 3. Meat
  - Composition
  - Place in the diet
  - Buying guides
  - Caring for it in home
  - Methods of preparation of tender, and less tender cuts
- 4. Desserts
  - Kinds: pies, cakes
  - Methods of cookery
- 5. Doing the family marketing
- 6. Planning and preparing the family dinners
- 7. Breads for dinner
  - Baker's bread or homemade
  - Yeast bread--principles of making

VII. Food preservation - - - - - - - - - 3 weeks
- 1. Value
- 2. Methods
- 3. Canning principles
- 4. Canning budget for the family

VIII. Entertaining friends - - - - - - - 3 weeks
- 1. Various means of entertaining
- 2. Planning refreshments and entertainments
- 3. Ways of serving guests
- 4. Types of refreshments
- 5. Entertaining groups

FINDINGS

Fifty-six girls who were enrolled during the full school year 1941-1942 in McCune Rural High School participated in the study. The group lacked 10 of being the total number of girls enrolled in the high school during the year. These girls were not included because they were not in school the full year. Those in the study lived in McCune or on farms within a radius of 10 miles from the school, the latter requiring the use of school buses.

Concerning family size, the girls were from families that varied from three to nine members. The mean size family was 5.14 which is slightly larger than the mean of 4.48 persons as found for rural farm families by Ogburn (1933). Thirteen of the girls were members of families which had no boys in the family, and 11 of this group had no brothers or sisters.

Eighty per cent of all the families of the girls lived on farms which indicated that farming was the occupation of most of the fathers. Actually though, only 64 per cent were listed as farmers. The remaining occupations reported were varied but each consisted of only a small percentage of the total. The occupations included laborer, roadworker, car salesman, lake caretaker, grocery clerk, mechanic, merchant, rural mail carrier, defense plant worker, carpenter, bus driver, and local water plant caretaker. None of these would be considered as belonging to the higher income levels.

A grouping was made of the girls on the basis of their previous and present enrollment in homemaking courses. This was used in analysing that part of the data in which comparisons of the groups were significant to the study. Group I consisted of all the freshmen girls in school. They were 12 in number and were enrolled in first year homemaking. Group II was composed of the 16 sophomore girls enrolled in second year homemaking. Group III comprised all junior and senior girls who had previously completed two years of homemaking and numbered 21. Group IV, numbering seven, included those girls who had completed only one year of homemaking and who were not enrolled in this department at the time the study was made. This group included sophomores and juniors.

Eleven per cent of all the girls had completed units in foods in the seventh grade and 32 per cent had in the eighth grade. Fourteen per cent of the girls, all of whom were freshmen, had assisted in preparing the hot noon lunch in their respective rural schools, and 30 per cent had carried 4-H projects in foods. It was noted that Group IV or those whose work in homemaking had been completed at the end of one year had the smallest percentage of girls who had participated in either pre-high school foods courses or in 4-H projects. This might have had some bearing upon reasons why they did not enroll in another year of homemaking.

A variety of foods was produced by the families as is shown in Table 1. Vegetables, poultry, eggs, milk and butter were the five foods produced by the largest percentage of the families.

Beef and pork were raised by 72 per cent of the families. Evidently mutton was not a favorite as only 27 per cent produced this meat. Fruit was raised by only 52 per cent of the families. Though this percentage falls much below that of vegetables, it is much higher than might be expected since Crawford County has not been considered a fruit growing territory, but rather a general farming region.

Table 1. Foods produced by the families.

Foods	Per cent of families
Vegetables	96
Poultry	93
Eggs	91
Milk	88
Butter	78
Pork	72
Beef	72
Cheese	52
Fruit	52
Mutton	27

The canning of food was not done as extensively in the homes as might have been expected. Table 2 shows the percentage of all families canning the various kinds of food. An examination of the check lists disclosed some variation in the amount of canning done by the families. This comparison of the canning practices of the families showed that those of Group II, the sophomore girls, canned a greater number of quarts of fruits and vegetables than did those of Group I, the freshmen girls. The families of Group III, the upper class girls who had completed two years of homemaking, showed an increase over Group II in the number of quarts of vegetables canned.

Table 2. The canning done in the homes.

Food	Amount	Per cent of families
Fruit	Practically none	0
	50 Qts. or less	22
	50 Qts. to 100 Qts.	41
	More than 100 Qts.	32
Jams, preserves	Practically none	14
	50 Qts. or less	52
	50 Qts. to 100 Qts.	7
	More than 100 Qts.	0
Meat	Practically none	27
	50 Qts. or less	14
	50 Qts. to 100 Qts.	2
	More than 100 Qts.	2
Vegetables	Practically none	5
	50 Qts. or less	21
	50 Qts. to 100 Qts.	18
	More than 100 Qts.	52
Pickles	Practically none	29
	50 Qts. or less	34
	50 Qts. to 100 Qts.	34
	More than 100 Qts.	2

The renting of storage lockers has in recent years provided families in many communities another means of food preservation. This has resulted in a distinct saving in food costs and has also enabled the families to have a greater variety of food. Only five per cent of the families in this study rented storage lockers. Perhaps a greater number did not rent lockers because such storage facilities were located 15 and 22 miles from McCune.

Adequate kitchen equipment and conveniences used in the preparation of food is considered of great importance in carrying on the work of the home. It is a means of saving time and energy of the worker and it may be a means of encouraging a girl to accept responsibility in the activities relating to food. A large share of the homes had a limited amount of equipment and few conveniences in their kitchens (Table 3).

Coal stoves were used in 76 per cent of the homes and oil or kerosene stoves in 54 per cent of the homes. Only 23 per cent of the homes had gas stoves. This was to be expected as coal and kerosene are more available and are less expensive than gas, wood, and electricity. Fifty-five per cent of the girls reported stoves equipped with oven regulators. This would give some evidence of a trend toward the use of the more accurate methods in baking.

Pressure cookers were owned by 48 per cent of the families, which would indicate that more canning could be done by the families than was shown to be the case. Forty-seven per cent of the families owned ice refrigerators and 18 per cent had mechanical refrigerators. This fact was not surprising as only 20 per cent of the families lived in town where electricity was available and the initial cost of gas and kerosene refrigerators was too great for many families to afford.

Built-in cupboards were found in only 39 per cent of the homes which might signify a lack of adequate storage facilities in the kitchens. Kitchen sinks were a part of the equipment of 87 per cent of the homes and 11 per cent had water in the kitchen. These low percentages showed the need for an increase in the number of kitchen conveniences.

Few electrical appliances were found in the homes. Eighteen per cent had toasters and waffle irons, and only a very few had electric mixers, coffee makers or other electrical equipment.

Table 3. Equipment in the home.

Equipment	Per cent of families
Cook stoves	
coal	75
oil	54
gas	23
gasoline	11
wood	5
electric	2
Oven regulator	55
Pressure cooker	48
Refrigerator	
ice	47
mechanical	18
Built-in cupboards	39
Sink in kitchen	27
Water in kitchen	11
Waffle iron	18
Electric toaster	18
Electric mixer	5
Electric coffee maker	4
Electric roaster	0

Most of the girls lived in houses which were built a number of years ago when kitchens were made much larger than they are today. The kitchens were used as meal service centers by 66 per cent of the families for breakfast, by 52 per cent for supper and by 39 per cent for the noon meal (Table 4). This frequent use of the kitchen for serving the family meals apparently was due to several reasons. The kitchens were sufficiently large to permit this practice and in the winter the fuel used to prepare the meal served also to heat the room. Between 34 and 41 per cent of the families ate their meals in the dining room. Breakfast nooks were not a structural part of many homes so only four per cent ate their meals there.

In a majority of the families the members habitually ate their meals together which revealed an interesting family relationship. In 80 per cent of the families, the members ate breakfast together and in 86 per cent they ate supper together. In farm communities, it is usually necessary for the school children to carry lunches. This no doubt accounts for there being only 54 per cent of the families whose members ate their noon lunch together.

The style of food service most frequently used was that in which the food was placed on the table and passed by the various members. In 54 to 59 per cent of the homes this type prevailed. Twenty per cent of the girls reported that their fathers carved the meat at the table and 20 per cent reported that their mothers did. Eighteen per cent of the mothers and five per cent of the fathers served the meat at the table while the vegetables were being passed. The prevalence of this type of table service is especially interesting since most high school text booke make no mention of this simple service. Table 4 shows the meal service practices followed in the homes of the girls.

Table 4. Meal service practices.

Practices	Per cent of families
Daughter waits on table	62
All food placed on table except dessert	59
All food placed on table and passed	54
Father carves meat at table	20
Mother carves meat at table	20
Mother serves meat, vegetables passed	18
Mother serves meat and vegetables	12
Food placed on plate in kitchen	9
Father serves meat, vegetables passed	5
Father serves meat and vegetables	4

The daughter waited on the table in 62 per cent of the homes. Since much of the meat service consisted of placing all food on the table and then passing it, this was a high percentage of girls who waited on the table. The same practice of having some one wait on the table when company was present was found to have been used in 50 per cent of the families. This might have been due to a lack of thoughtful planning before the family was seated at the table or it might have been due to the desire to serve soups, desserts and similar foods at the right temperature.

The same general type of meal service as used in the family meals was followed when the families entertained company for dinner. Seventy-three per cent of the girls reported that when company was present for a meal the food was placed on the table and the guests helped themselves. Food was served cafeteria style in 18 per cent of the homes when there were guests. The practice of having all the family members and the guests seated at one table was used in 68 per cent of the homes. Sixty-eight per cent of the families served different food and 73 per cent used different table linen when there was company.

Concerning food preparation 98 per cent of the girls listed frying as a method by which meat was prepared in their homes and 70 per cent indicated roasting (Table 5). Broiling and braising for the method of cooking the meat were used in comparatively few of the homes. The frying of potatoes was a method of cooking followed by 91 per cent of the families, mashing potatoes by 86 per cent and boiling potatoes by 70 per cent. In the preparation of other vegetables, 80 per cent of the families boiled them and

70 per cent of the families creamed them.

A comparison of the groups showed that a much lower percentage of the families of Group II prepared fried potatoes than did those in Group I. Again in the preparation of other vegetables, a lower percentage of the families of Group II fried these foods than did those of Group I. A lower percentage of girls in Group III reported the use of fried vegetables than did the girls of Group I and Group II. A much higher percentage of Group III used boiled and creamed potatoes than did either Group I or Group II. This might be some indication of the constructive influence of instruction in foods upon the methods of preparing vegetables in the home.

Frying as a method of preparation of eggs was found to be used by 91 per cent of the families. Other ways included scrambled eggs prepared by 70 per cent of the families and boiled eggs by 66 per cent of them. Forty-eight per cent of the girls reported the preparation of soft cooked eggs and 41 per cent that of hard cooked eggs. Table 5 shows the methods of food preparation used by the families in this study.

Table 5. Methods of food preparation by the families.

Food	Method	Per cent of families
Meat	Fried	98
	Roasted	70
	Pan broiled	25
	Oven broiled	20
	Braised	11
Potatoes	Fried	91
	Mashed	86
	Boiled	77
	Baked	46
	Creamed	45
Other vegetables	Boiled	80
	Creamed	70
	Baked	41
	Fried	39
Eggs	Fried	91
	Scrambled	70
	Boiled	66
	In other foods	61
	Soft cooked	48
	Hard cooked	41
	Poached	30
	Creamed	2

Eleven of the 18 essential foods included in the check list were served either at each meal or at least once daily (Table 6). The frequency of the serving of these protective foods was gratifying in some instances and disappointing in others. Milk was served every meal by 66 per cent of the families. Cheese was served by 30 per cent of the families from one to three times a week. There was evidence that a majority of the families had sufficient protein in their meals. Forty-six per cent of the families had eggs once daily in their meals and 14 per cent served them twice daily. Meat was served once daily by 41 per cent of the families and twice daily by 29 per cent of the families. The favorite of all foods according to the percentage of frequent servings was butter and 88 per cent of the girls had this food at every meal.

Certain good dietary practices that are considered essential were followed by a definitely low percentage of the families. Considering families who used foods once or more a day, only 35 per cent of them served citrus fruits and 45 per cent served tomatoes daily. Cooked or canned fruits were used by only 51 per cent of the families per day, and by 20 per cent of the families three to five times per week. These were all definitely desirable practices as far as a small percentage of the families were concerned. On the other hand, dried fruit was seldom or never served by 50 per cent of the families and whole wheat bread rarely formed a part of the diet of 39 per cent of the families. However, whole grain cereal was served once daily in 55 per cent of the homes. Liver and fish, both nutritious foods, were seldom served by a large percentage of the families.

A small percentage of the families had some other good dietary practices. Potatoes were served more frequently than any other vegetable; 41 per cent of the homes prepared them twice daily and 29 per cent once daily. Thirty per cent of the families provided green, leaf or yellow vegetables daily and 25 per cent of them served these vegetables at least three to five times a week. Other vegetables were served frequently, 27 per cent of the girls reporting that they had these foods once daily in their homes. Table 6 shows the frequency these foods were served in the meals of the girls.

Table 6. Frequency of foods served in family meals.

Food	Frequency in per cent					
	Every meal	Twice daily	Once daily	3 to 5 times wk.	Once weekly	Seldom never
Cheese	0	0	5	29	30	30
Milk	66	14	16	2	2	0
Citrus fruits	5	7	23	27	14	21
Other fresh fruit	13	7	41	7	7	7
Fruit: cooked or canned	13	13	20	20	14	4
Fruit: dried	0	2	4	20	13	50
Tomato	2	18	23	25	18	9
Potatoes	9	41	29	16	2	0
Green, leaf, or yellow vegetables	5	20	30	25	5	5
Other vegetables	21	27	23	9	2	2
Whole grain cereal	2	4	55	11	5	20
Whole wheat bread	9	4	7	18	7	39
Chicken	0	9	23	25	34	4
Eggs	2	14	46	14	9	2
Meat	5	29	41	4	9	4
Liver	0	0	0	0	14	62
Fish	0	0	0	5	18	75
Butter	88	4	4	2	2	2

The mean size of the 12 families in Group I was 5.08. The family members included 26 adults and 35 children. These 12 families used 38 quarts of milk per day or 3.17 quarts per mean family. According to the accepted standard each adult should have one pint of milk per day and each child should have one quart of milk. Based on this, these families should have consumed 48 quarts instead of the 38 quarts. The mean family consumption of milk was 3.17 quarts instead of the desired 4.00 quarts. Group II consisted of 16 families including 35 adults and 45 children, and the mean size family was 5.00. The total intake of milk for these families was 49 quarts instead of the basic requirement of 62.5 quarts. The mean family consumption was 3.06 quarts instead of the ideal 3.00 quarts. The 21 families of Group III numbered 42 adults and 66 children. The mean size of the families was 5.14. The total milk intake was 72.5 quarts instead of 87 quarts according to the standard. The mean family consumption was 3.53 quarts rather than 4.24 quarts based on the daily standard of one pint per adult and one quart per child. Fourteen adults and 24 children comprised the seven families of Group IV, the mean size of family being 5.49. The total milk intake of this group was 29 quarts which was very near the ideal of 31 quarts. The mean family consumed 4.14 quarts or slightly less than the 4.44 quarts needed to meet the standard.

Fresh or canned fruits were usually served as the dessert in the family meal in 48 per cent of the homes. Cake was also a favorite dessert for 43 per cent of the girls usually had it for dessert. Custards and puddings were the desserts occasionally used by 61 per cent of the families. Ice cream was served occasionally by 59 per cent of the families. Cookies, gelatin dishes and one or two crust pies were equally favored as an occasional dessert by 54 to 57 per cent of the families. Dried fruit was served as a dessert in 30 per cent of the homes. This was the same percentage that was indicated in the checking of the frequency with which various foods were served in the family meals (Table 6). The frequency with which these desserts were used is shown in Table 7.

Table 7. Type of dessert served in family meals.

Dessert	Frequency in per cent		
	Usually	Occasionally	Never
Cake	43	55	2
Cookies	34	57	9
Custards, puddings	23	61	16
Fruits, fresh	48	45	5
Fruits, dried	9	38	50
Fruits, canned	43	52	4
Gelatin	16	58	25
Ice cream	36	59	5
Pie, one crust	29	54	16
Pie, two crust	39	54	7

The refreshments served when guests were entertained in the home did not vary greatly from the desserts served at the close of the family meals. The refreshments served most frequently by the families of all groups were ice cream and cake or cookies, beverage and cookies, fruit salad and cookies, pie, popcorn, cocoa and sandwiches, or lemonade and sandwiches. The variety of desserts and refreshments were limited.

An increase in the responsibilities assumed in the care of the kitchen was noted in each succeeding group. This might be due to increasing maturity of the girls and/or to more instruction in foods. In only two activities did the younger girls in Group I exceed the other groups in percentage of those assuming responsibilities in the care of the kitchen. These included the drying of dishes and the putting away of the dishes. Greater managerial ability was needed to perform many of these tasks and in each instance a higher percentage of the girls in Group II performed these tasks than did the girls of Group I. A greater percentage of the girls in Group III had such responsibilities than did Group II. There were only two responsibilities in which the girls in Group IV surpassed in percentage all the other groups. These activities were cleaning of the stove and mopping the floor. In all other instances the percentage of girls in Group IV participating in these home activities was less than the percentages of one or more of the other groups. This may be some indication that more instruction and participation in homemaking encouraged the girls to assume more home responsibilities. Table 8 shows the percentages of girls in each group who had the various responsibilities in the care of the kitchen.

Table 8. Usual responsibilities of girls in the care of the kitchen.

Activity	Per cent			
	Group I	Group II	Group III	Group IV
Care for the garbage	25	44	56	43
Clean cupboards	25	44	71	43
Clean refrigerator	17	6	33	14
Clean sink	8	31	38	29
Clean stove	50	69	71	86
Clean woodwork	8	38	76	57
Dry dishes	92	88	86	86
Keep shelves in order	33	38	71	70
Mop floor	65	50	62	70
Rearrange shelves	8	21	67	43
Put away dishes	100	94	95	86
Put away food after meal	83	69	100	86
Store canned food	8	6	33	29
Sweep floor	100	75	95	86
Wash dishes	83	81	95	86

Comparatively few of the girls in each group showed an aversion to performing these tasks in the care of the kitchen. An interesting fact was that washing and drying of dishes was disliked by a rather high percentage of the girls in all the groups except by those in Group II.

The job disliked by the highest percentage of girls was dishwashing, 42 per cent of the girls in Group I, 33 per cent of Group III and 70 per cent of Group IV checking this activity as an undesirable job. No girl in Group II considered this activity as distasteful. Eighteen per cent of all the girls did not like to mop the floor and 16 per cent disliked to clean the woodwork. The reasons listed by the girls as to why they disliked the various kitchen responsibilities revealed no very great analytical thinking on the subject. The reason given by 14 per cent of the girls was that the jobs required too much time. Thirteen per cent reported they would rather do other things and the same percentage stated that the work was too tiresome. Considering the total number of girls, these percentages were low.

Regularity in the eating of breakfast progressively improved with succeeding groups of girls. Sixty-five per cent of the girls of Group I, 75 per cent of Group II, and 86 per cent of each Group III and Group IV ate breakfast daily. Of the total group this meant that 78 per cent of the girls ate breakfast each morning. Twenty per cent of all the girls ate breakfast occasionally and only two per cent never ate breakfast.

The list of foods which composed the usual breakfast menus of the 56 girls showed no wide difference in meal pattern. In general there was a good selection of food. Seventy-eight per cent of the girls ate bread for breakfast (Table 9). Cereal was usually a part of the breakfast of 66 per cent of the girls. Milk was used by 61 per cent of the girls and cocoa by 37 per cent of them. Considering that the total percentage of girls using milk and cocoa was 98 per cent, this was an encouraging situation. Fifty-five per cent of all the girls included fruit and eggs in their breakfast and only 23 per cent used coffee. Table 9 shows the breakfast foods commonly eaten by the girls.

Table 9. Foods generally eaten for breakfast.

Food	Per cent of families
Bread	78
Cereal	68
Milk	61
Bacon	57
Eggs	55
Fruit	55
Toast	52
Cocoa	37
Pancakes	27
Coffee	23
Meat	18
Potatoes	4
Gravy	4
Preserves	2
French toast	2
Chicken	2

Another phase of the study pertains to the arrangements for lunch. A majority of the girls or 68 per cent brought their noon lunch from home. Twenty per cent went home for lunch and 13 per cent ate at one of the restaurants. Group IV was the only one without some of its members eating the noon lunch at a restaurant. Table 10 shows where the members of each group ate their noon lunch.

Table 10. Place of eating lunch in per cent.

Place	Group I	Group II	Group III	Group IV
Bring lunch from home	65	75	56	86
Eat at restaurant	17	6	19	0
Go home	17	19	24	14

The girls who ate their noon lunch at the restaurant varied their noon lunch selections but little. Hamburgers, chili, ice cream, candy bars, and coca cola were ordered by a higher percentage of girls than were other foods. Seventeen per cent of Group I and 13 per cent of Group II ate sandwiches. The pattern of the noon lunch varied slightly among the girls of the three groups who ate at restaurants.

A wider selection of food was evident in the lunches brought from home than in those purchased in town. However, there was no great variation between the groups of girls in the choice of food. Pickles were brought by 43 per cent of the girls in Group IV, by 25 per cent of the girls in Group I and by only six per cent of those in either Group II or Group III. Milk was not included in any of the lunches brought from home. A possible reason for this might be that many girls do not like to carry lunch boxes, thermos jugs or any article that would have to be taken home again at night. Even though they had permission to keep their individual jars of milk in the school refrigerator, the girls did not bring milk to school in their lunches. The foods usually brought from home in the lunches of the girls are given in Table 11.

Table 11. Food content of lunches brought from home.

Food		Per cent of girls
Fruit, fresh		55
Fruit, canned		9
Cookies		46
Cake		36
Sandwiches:	meat	57
	cheese	38
	chicken	29
	peanut butter	25
	fruit	7
	egg	5
	sweet	4
	lettuce	2
	sandwich spread	2
Pickles		18
Pie		16
Candy bar		2

The lunches purchased at the restaurant or those brought from home would not score high because they were lacking in variety of foods and also were not balanced meals. They did not include milk, fruits, or vegetables. Neither could the lunches of the girls who ate the noon meal away from home be rated high.

Candy was occasionally purchased at noon by 73 per cent of all the girls, frequently by 13 per cent and never purchased by 14 per cent.

The percentage of girls who did not drink milk declined with succeeding groups. Twenty-five per cent of the girls of Group I, 19 per cent of Group II and five per cent of Group III did not drink milk. Table 12 shows the percentage of girls in each group who drank from one cup to two quarts of milk per day. A larger percentage of Group III consumed more milk as a beverage than did the girls in any other one group.

Table 12. Amount of milk used as a beverage by the girls.

Quarts	Group I	Group II	Group III	Group IV
0.0	25	19	5	0
.25	25	31	24	0
.50	25	25	5	43
.75	8	0	12	0
1.00	17	6	48	43
1.50	0	0	5	14
2.00	0	19	0	0

Only 17 per cent of Group I and six per cent of Group II drank a quart of milk a day but 48 per cent of Group III had this amount as a beverage. A fair percentage of Group IV, 43 per cent, drank one quart of milk per day. This same percentage drank one pint of milk a day. Foods instruction may have had an influence on the amount of milk used as a beverage.

Milk was also obtained by the girls in other foods in the meals. Seventy-seven per cent of all the girls had gravy made with milk every day and 36 per cent ate some creamed food daily (Table 13). Ice cream was made daily in the summer time by 32 per cent of all the families and three to five times a week by 52 per cent of all the families. Forty-six per cent of the girls had cream soup three to five times a week. Table 13 shows the frequency with which milk was used in the diet in other foods.

Table 13. Percentage of the girls using milk through other means in the diet.

Food	Daily	3 to 5 times weekly
Creamed foods	36	39
Custards	18	39
Gravies	77	21
Ice cream	32	52
Soup	11	46
Cereal	2	2
Quick breads	2	0
Cocoa	2	0

With this wide use of milk in other foods by such a fairly large percentage of girls it is highly probable that the milk consumption of a majority of the girls was close to standard.

Eating between meals occasionally was the habit of 77 per cent of all the girls and regularly by 20 per cent. Never eating between meals was the practice of only four per cent. The foods eaten between meals included fruit, cookies, milk, sandwiches and coca cola. There were no significant differences in the choices of the groups. Seventy-one per cent of all the girls ate apples between meals, 59 per cent ate cookies and 57 per cent ate sandwiches. Oranges were eaten between meals by 46 per cent of the girls and candy by 45 per cent of them. The foods eaten between meals by the girls are indicated in Table 14.

Table 14. Foods eaten between meals.

Food	Per cent of girls
Apple	71
Cookies	59
Sandwich	57
Oranges	46
Candy	45
Cake	36
Milk	27
Coca Cola	25
Fruit juice	20
Bread and butter	4
Fruit	2

That the girls liked to try new foods is indicated by the fact that 66 per cent of all the girls reported they liked to try new foods which they had never tasted, but 32 per cent did not like to taste different foods. A total of only 32 different foods which they had learned to like were listed by the entire group of girls. Twenty-five per cent of all the girls learned to like carrots; 18 per cent developed a liking for spinach and nine per cent learned to like turnips. This was a fairly low percentage of girls to develop a taste for new foods. The trying of 32 foods could scarcely be considered an indication of improvement resulting from instruction in foods. There had probably been little conscious effort developed on the part of the girls to try to add new foods to their diets.

The girls did practically no canning or preserving of food by themselves but they did help with these activities. However, the percentage of each group participating varied but little. Table 15 lists the percentages of all who helped with food canning activities.

Table 15. Percentage of girls helping with food preservation.

Activity	Group I	Group II	Group III	Group IV
Prepared vegetables	83	50	56	70
Canned vegetables	58	38	48	29
Prepared fruit	83	44	52	70
Canned fruit	50	31	52	29
Made jelly	17	44	48	29
Made pickles	25	13	38	43
Made preserves, jams	8	13	24	14

A fairly high percentage of the girls in Group I helped to prepare the fruit and vegetables for canning. An increasing percentage of girls in succeeding groups assisted in the making of jelly, preserves and jams. In all other instances, a higher percentage of the girls in Group I helped with these activities of canning than did the girls of Group II. In every activity pertaining to food preservation, a higher percentage of girls in Group III participated than did those of Group II. These percentages for all groups are low except for two activities of the girls in Group I. This indicated that the responsibility of these girls in regard to food preservation was in helping with the task and not in doing it by themselves.

The percentages of the girls who had certain home responsibilities which they performed alone were definitely low. Twenty-five per cent of the girls occasionally prepared breakfast alone (Table 16). Setting the table for dinner and supper was frequently done alone by 20 per cent of the girls and always setting the table alone for breakfast by 38 per cent of them. Cleaning after the three meals was frequently the responsibility of 20 to

23 per cent of the girls. Twenty-three per cent of the girls always cleaned after supper. Preparation of vegetables for a meal was done by 20 per cent of the girls occasionally and by 21 per cent of them frequently. Fruit was frequently purchased alone by 20 per cent of the girls. Twenty per cent of the girls frequently dressed chickens.

The preparation of individual foods was done alone by a higher percentage of girls than planning or preparing meals. Thirty-nine per cent of the girls baked cakes occasionally and 21 per cent of them baked cakes frequently. Cookies were made by 20 per cent of the girls frequently and by 27 per cent of them occasionally. Candy was occasionally made by 27 per cent of the girls and frequently by 21 per cent. Table 16 shows those percentages of the 20 per cent or more of girls who assumed responsibilities in relation to food preparation.

Table 16 shows evidence that a higher percentage of the girls participated alone in the activities rather than helped with them. It appeared that these girls on the whole were not contributing much help in the home toward activities relating to food planning and preparation.

Table 16. Percentage of girls having certain responsibilities relative to meals.

Activity	Alone			With help		
	Occasionally	Frequently	Always	Occasionally	Frequently	Always
Plan meals						
dinner	27			20		
supper				20		
Prepare						
breakfast	25					
supper				23		
Wait on table						
breakfast			21			
supper			20			
Set table						
breakfast	23		36			
dinner	20	20	25			
supper		20				
Cleaning after						
breakfast		23				
dinner		20				
supper		22	23			
Prepare food						
for company parties						23
for company dinners				30		
Serve food for company dinner				27		
Prepare vegetables	20	21		20		
Cook cereals	23					
Buy fruit		20				
Dress chicken		20				
Make: biscuits	27					
breads	23					
cakes	30	21				
candy	27	21				
cocoa	21	32				
coffee	23					
cookies	27	20				

While there was some progress shown in succeeding groups it was not consistant throughout all the responsibilities which the girls checked. Twenty-five per cent of Group I planned dinners alone and 43 per cent of Group III had this responsibility. Improvement in assuming responsibility for cleaning after meals was shown as eight per cent of Group I, 13 to 25 per cent of Group II and 24 to 33 per cent of Group III frequently carried on this activity alone. None of Group I prepared food for parties but 19 per cent of Group II and 24 per cent of Group III performed this task alone occasionally. More girls helped to prepare and serve food for company dinners than did it alone. Eight per cent of Group I, 31 per cent of Group II and 43 per cent of Group III showed evidence of improvement through succeeding groups. Frequently 13 per cent of the girls of Group II and 38 per cent of Group III prepared vegetables for meals.

Considerably more girls in Group III purchased foods than did any of the girls in Group I and II. None of those in Group IV purchased any food for the family.

An increasing percentage of girls in the various groups prepared individual foods. Bread was occasionally made by eight per cent of Group I, by 19 per cent of Group II and by 33 per cent of Group III. Pies were baked by eight per cent of Group I, by 25 per cent of Group II and by 29 per cent of Group III. Biscuits were occasionally made with help by 13 per cent of Group II and by 43 per cent of Group III. Desserts were occasionally made alone by 25 per cent of Group I, by 29 per cent of Group II and by 38 per cent of Group III. The general trend observed in all groups was that too few girls were participating in home activities.

The seven day foods records and the menus planned revealed some interesting comparisons. The freshmen girls or Group I had very low scores on the food intake records. Table 17 shows a comparison of the food intake scores and the planned menus.

Table 17. Comparison of scores of food intake and planned menus for Group I in September.

Girls	Daily food intake							Mean	Menus Planned
	1	2	3	4	5	6	7		
1	55	40	40	45	20	30	15	33	60
2	50	55	45	35	45	55	40	49	65
3	60	35	30	45	40	45	35	41	50
4	20	65	30	45	65	60	60	43	55
5	20	35	25	30	60	55	40	36	65
6	45	45	45	45	30	65	45	46	70
7	25	25	25	25	15	20	15	21	65
8	45	55	25	50	70	55	30	47	60
9	20	35	20	30	10	30	20	23	75
10	50	45	35	55	25	45	25	40	70
11	45	45	50	40	20	25	25	32	55
12	45	70	45	45	40	40	45	47	60
							Mean	39	63

The range in scores was 10 to 70 with a mean score of 39. This was very low according to Chaney and Ahlborn (1939). Even the menus planned by this group ranked low. Only one with a score of 75 could be classed as fair, and the remainder ranged from 50 to 70 with a mean of 63. In January upon completion of the semester's work in foods, 58 per cent of this group had higher mean scores than they did in September. The mean score for the food intake records for January was 44 instead of 39, both of which were definitely low but some improvement was noted. Table 18 gives the comparison of the scores of the food intake records and the planned menus for January.

Table 18. Comparison of scores of food intake and planned menus for Group I in January.

Girls	Daily food intake 1	 2	 3	 4	 5	 6	 7	Mean	Menus Planned
1	55	65	25	45	50	20	40	43	80
2	45	60	50	45	50	45	35	47	60
3	45	35	45	40	35	25	45	39	65
4	60	65	90	55	55	40	55	60	80
5	50	45	60	55	40	35	60	49	65
6	55	65	55	70	65	75	65	64	65
7	45	40	20	35	15	35	60	36	65
8	50	30	40	25	65	35	15	37	65
9	50	50	30	15	50	55	40	41	75
10	45	30	20	10	30	45	55	32	75
11	30	25	20	35	35	50	50	31	55
12	50	40	45	45	30	50	80	49	85
							Mean	44	70

The May food intake record showed that continued improvement had been made by the same percentage of girls but the specific increases were by slightly different persons. The mean score was raised only one point or to 45 (Table 19). The menus planned by the girls in January had a score range of 55 to 85 with a mean of 70 which was seven points higher than the mean of the menus planned in September. The range of scores of the planned menus was definitely greater in May as it was 45 to 100 but the mean score remained the same. Table 19 shows the scores of the food intake records and the planned menus for May.

Table 19. Comparison of scores of food intake and planned menus for Group I in May.

Girls	Daily food intake							Mean	Menus Planned
	1	2	3	4	5	6	7		
1	50	30	25	55	45	30	50	41	85
2	50	55	35	50	45	60	50	46	65
3	25	40	40	60	35	20	60	40	65
4	60	85	70	45	65	65	55	64	85
5	65	40	65	60	65	60	70	59	80
6	60	50	50	85	65	80	55	64	100
7	20	10	20	25	25	30	40	24	65
8	65	65	50	60	60	45	45	56	60
9	60	45	55	45	55	50	30	49	75
10	15	35	15	15	60	75	70	41	75
11	40	35	40	30	25	40	40	36	46
12	55	20	15	40	20	25	5	23	45
							Mean	45	70

Evidences for these low scores were very definite. On school days when the girls either carried their noon lunch or purchased it at a restaurant, the scores of the day's meals were lower due to a lack of green vegetables, whole grain cereals and partly due to a lack of milk. With the widespread use of baker's bread which was made of enriched flour, the absence of whole grain cereals in the diet may not have been as serious as it appeared. The lunches brought from home usually consisted of meat, cheese, or peanut butter sandwiches, fresh fruit and cake or cookies. This meant that if any vegetables were to be included in the diet, they must be in the evening meal. Too small an amount of water was consumed each day. This may have been because it was difficult to estimate the amount of water when drinking from the school fountains. All the girls commented that they usually drank water freely at home. All the food intake records scored high in protein content. There was no check made of the caloric content of the days' food intake but most of the meals seemed fairly high in starch which provided quantity of food but not always quality.

The highest scoring meal from each checking period was chosen from the food intake record of Girl No. 9 in Group I (Table 20). This girl's mean average score for food intake was 23 in September, 41 in January and 49 in May. In September this girl reported that she never ate breakfast. Her food for the remainder of the day included: three meat sandwiches, two cookies and one apple in her lunch brought from home. Her evening meal consisted of fried chicken, mashed potatoes, gravy, bread, and butter, sliced tomatoes, canned peaches and iced tea. This day's food record was scored at 35 points. In January this same girl ate breakfast regularly and her highest scoring day's food record of 55 points included: one-half grapefruit, toast and oatmeal with cream, milk and sugar; four chicken and lettuce sandwiches, one banana, one orange; Swiss steak, mashed potatoes, gravy, lettuce and celery salad, bread, butter and custard pie. The highest scoring day's record of food intake in May totaled 60 points. It consisted of bread, butter, bacon, grapefruit and milk for breakfast; two hamburgers, milk and candy bar (meal purchased at restaurant) and for supper one egg, potatoes, spinach, milk and strawberry shortcake with whipped cream. Although these samples did not score high, they did show some improvement and particularly in that the girl developed the habit of eating breakfast.

The mean averages for the food intake records were considerably lower than the mean of the planned menus. This indicated that the girls probably knew the standards for daily food requirements but had not changed to any great degree the food patterns already established in their homes. Table 20 shows a comparison of the mean scores of food intake records and planned menus of the girls in Group I.

Table 20. Comparison of mean scores of Group I.

	Food intake			Menus planned		
Girls	Sept.	Jan.	May	Sept.	Jan.	May
1	35	43	41	60	80	85
2	49	47	46	65	60	65
3	41	39	40	50	65	65
4	42	60	64	55	80	85
5	36	49	59	65	65	80
6	46	64	64	70	65	100
7	21	36	24	65	65	65
8	47	37	56	60	65	60
9	23	41	49	75	75	75
10	40	32	41	70	75	75
11	32	31	35	55	55	45
12	47	48	23	60	85	45
Mean score	39	44	45	63	70	70

The mean score of the daily food intake records of Group II in September was 39, the same as that of Group I (Table 21). The mean score of their planned menus was 60 or three points below that of Group I. The range of the scores for the food intake records was 13 to 60. The range of the scores for the planned menus was almost as great, being 30 to 80. Table 21 shows the scores of Group II for September.

Table 21. Comparison of scores of food intake and planned menus for Group II in September.

Girls	Daily food intake 1	2	3	4	5	6	7	Mean	Menus Planned
1	60	60	60	70	50	70	50	60	60
2	25	45	40	15	30	45	45	35	40
3	40	50	50	65	20	45	35	43	80
4	60	55	75	65	70	45	55	60	80
5	20	30	20	45	20	25	25	26	30
6	30	25	15	20	15	35	20	23	40
7	35	30	45	50	35	15	25	33	60
8	35	35	40	35	25	30	40	33	85
9	50	50	50	50	50	30	35	45	60
10	60	70	50	55	45	45	55	56	55
11	45	25	45	30	45	50	30	38	50
12	35	30	30	20	15	25	5	23	65
13	35	25	40	40	35	40	55	38	75
14	30	30	60	50	55	60	50	48	40
15	50	40	45	60	60	60	60	54	70
16	10	20	10	10	-10	20	30	13	55
							Mean	39	60

The reasons for the low scores of Group II were the same as for the other group. The daily food intake was low in the protective foods on school days when the girls had their noon lunch away from home. The food intake as a whole was low in eggs, in whole grain cereal, and in green, yellow or leaf vegetables. Fruits might have been used more abundantly. A very small amount of water was used and more milk could have been consumed. This group also seemed to have a liberal supply of protein.

Group II showed a considerable gain in mean scores in May over those of September. The mean score of the food intake record in May was 56 instead of 39 in September. Table 22 shows the scores and means of the food intake records and the planned menus for Group II for May.

Table 22. Comparison of scores of food intake and planned menus for Group II in May.

Girls	Daily food intake 1	2	3	4	5	6	7	Mean	Menus Planned
1	50	75	85	85	95	75	90	79	85
2	50	55	30	65	40	55	50	49	85
3	35	25	55	60	55	40	60	47	60
4	65	75	80	60	65	75	70	70	70
5	25	45	60	40	45	35	20	38	80
6	50	85	55	45	65	50	55	58	95
7	70	60	60	70	75	85	65	69	85
8	50	35	30	55	55	40	35	43	60
9	50	40	60	50	40	40	30	44	65
10	30	60	65	65	55	65	65	58	85
11	60	60	55	65	50	25	25	48	60
12	50	45	50	65	50	65	60	55	70
13	75	65	70	70	70	50	25	61	75
14	70	65	60	55	80	60	75	66	70
15	65	60	85	80	70	75	90	75	95
16	20	30	45	65	40	25	35	37	80
							Mean	56	75

Girl No. 6 made the greatest increase in mean scores of her food intake record. The following food intake for one day in September is her highest score or 35: breakfast: egg, two slices bread and butter with honey; noon lunch: meat sandwich and one slice cake; supper: canned corn, bread and tomatoes. In contrast to this sample of a day's menu in September her mean score in May of 58 was shown by the following day's menu which was scored 65. Breakfast: cocoa, bread and butter, grapefruit; lunch: two meat sandwiches, apple, piece of cake; supper: creamed potatoes, peas, bread and butter, and berries. This sample scored below the desired amount but there was a general trend toward improvement.

Ninety-four per cent of Group II increased the mean average of their food intake records in May over September. The other six per cent or one girl's score dropped one point (Table 23).

The scores for the planned menus had a range of 60 to 95 points with a mean of 75. This was an increase of 15 points in the mean over that of September. Seventy-five per cent of the girls in Group II increased their scores for planned menus in May, 19 per cent of them reduced their scores and one score remained the same. Though the scores were not as high as desired they did show improvement. The following table shows a comparison of the September and May mean scores for the food intake record and the planned menus for Group II.

Table 23. Comparison of mean scores of Group II.

Girls	Food intake		Menus planned	
	September	May	September	May
1	60	79	60	85
2	35	49	40	85
3	43	47	80	60
4	60	70	80	70
5	26	38	50	80
6	23	58	40	95
7	33	69	60	85
8	33	43	85	60
9	45	44	60	65
10	56	53	55	85
11	38	48	50	60
12	23	55	65	70
13	38	61	75	75
14	48	66	40	70
15	54	75	70	95
16	13	37	55	80
Mean score	39	56	60	75

Group III had a wider range of scores for the food intake records than did any other group. The range was 26 to 75 points with a mean score of 51. This mean of 51 was higher than the September mean score of Group I or II, each of which was 50. The reasons for the low scores of Group III were quite similar to those of the other groups. Some of the food intake records showed the absence of milk in the diets. Others showed very few green, yellow or leaf vegetables and others showed that fruit and eggs were lacking in the food eaten. All of the records were definitely lacking in whole grain cereals.

Table 24. Comparison of scores of food intake and planned menus of Group III.

Girls	Daily food intake							Mean	Menus Planned
	1	2	3	4	5	6	7		
1	35	35	50	45	40	50	50	44	65
2	50	60	55	25	50	25	40	44	65
3	35	35	20	35	25	30	40	31	75
4	55	75	65	35	40	70	60	57	75
5	40	45	25	60	50	25	45	41	85
6	60	55	50	75	35	45	45	52	85
7	35	60	70	55	65	65	75	60	80
8	55	45	50	60	45	40	35	47	70
9	60	40	35	65	35	55	50	49	70
10	55	10	65	35	50	20	15	34	55
11	80	70	85	50	75	70	45	68	90
12	45	55	50	35	50	40	50	46	80
13	80	75	70	65	80	45	45	66	80
14	75	75	80	75	65	75	80	75	80
15	40	20	45	45	20	50	30	36	75
16	40	55	35	65	75	70	85	63	70
17	40	35	35	25	45	50	55	41	55
18	70	85	60	75	85	65	85	75	95
19	50	45	45	35	45	45	45	44	65
20	65	70	70	75	80	75	75	74	80
21	15	10	25	25	35	30	40	26	40
							Mean	51	72.60

Group IV had a mean score of 49 for the records of food intake and a mean of 64 for the planned menus (Table 25). Most of the mean scores of the individual girls were quite low as the range was 36 to 70, the highest score being the only one above 54. One girl's record showed that she drank no milk. Nearly all records were low in leaf, green or yellow vegetables. Butter was another food of which little was used. Few of the girls in Group IV ate any eggs. Table 25 shows the scores for food intake records and for the planned menus.

Table 25. Comparison of scores of food intake and planned menus of Group IV.

Girls	Daily food intake 1	2	3	4	5	6	7	Mean	Menus Planned
1	15	40	45	30	35	45	45	36	40
2	80	85	75	85	60	45	60	70	75
3	55	40	55	65	65	50	50	54	80
4	60	45	55	60	45	70	0	48	75
5	50	50	30	50	65	70	40	51	70
6	50	60	65	55	50	35	45	51	60
7	65	45	35	40	50	45	45	46	50
							Mean	51	64

Table 26 shows the mean scores of food intake records and of the planned menus of each group for the various testing periods.

Table 26. Comparison of mean scores of all groups.

Test period	Group I	Group II	Group III	Group IV
Food intake:				
September	39	39	51	49
January	44	—	—	—
May	45	56	—	—
Planned menus:				
September	63	60	72.60	64
January	70	—	—	—
May	70	75	—	—

The mean scores of Groups I and II for food intake records in September were each 39 but by the records made in May, Group II had improved to a greater extent than had Group I. The mean score of Group I was raised six points but that of Group II had been raised 17 points. Group III showed a higher mean score or 51 for the September period. Group IV had a mean score of 49. As this group contained so few girls it could not be considered as an adequate sampling. In September the mean score of the planned menus for Group I was 63 points or three points higher than that of Group II. However by May the increase in the mean score of Group I was seven or a total of 70 and Group II increased the mean score of the planned menus by 15 points or a mean score of 75. Group III had a mean score of 72.60 which was the highest of any group. Sixty-four was the mean score of Group IV.

An increase was apparent in the intake of certain protective foods by a greater percentage of the girls in Group II than by those of Group I. Fifty-six per cent of Group II and 33 per cent of Group I showed an increase in the drinking of milk. The increased use of green, leaf, or yellow vegetables was shown by 75 per cent of Group II and by 42 per cent of Group I. There was some increase in the use of various fruits, 38 per cent of Group II and 25 per cent of Group I using more fruits at the close of the study. Forty-four per cent of Group II increased the use of eggs in their diets. The greater use of whole grain cereals was not as desirable as might have been for only 38 per cent of Group II and 17 per cent of Group I used more cereals. The indication of some additional use of these protective foods was gratifying. The fact that Group II showed a greater increase in the use of these foods than did Group I may have been an indication that the instruction in foods was a contributing factor.

SUMMARY

This study was made to ascertain the food practices of the girls in McCune Rural High School, to determine the effectiveness of the foods curriculum as shown by these practices, and to make recommendations for improvement of the curriculum in foods as indicated by the findings. The 56 girls who participated in the study were divided into groups according to the amount of foods instruction they had received. The food practices of each group were analyzed and compared with the curriculum as taught.

Instruction in foods was followed by improvement in the food practices of the girls in this study. This was in the food eaten daily, the meal patterns for breakfast and supper, the menus planned, the regularity of eating breakfast, the increase in the foods liked, and the increase in the eating of green or leaf vegetables, fruit and milk. Though the improvement was not as much as was anticipated, it gave indication that the instruction in foods might have influenced the food practices of the girls.

Certain undesirable food practices, however, were commonly noted among the girls. These were: daily low intake of whole grain cereals, eggs, fruit and green, leaf and yellow vegetables; planning of low scoring menus; planning and eating very poor lunches; assuming little responsibility in relation to meal planning and preparation at home; and seldom helping with food preservation at home. There were also in the homes, certain conditions and customs related to foods that definitely affected the girls' food practices. These were insufficient serving of fresh fruits, green, leaf and yellow vegetables, milk, whole grain cereals, liver and fish; little variety in methods of preparing foods; inadequate amount of food preservation; simple family meal service used every day and for company; and meager equipment and few conveniences for food preparation and service.

The outline of the curriculum in foods showed that subject matter pertaining to the various food practices of the girls and their families had been included. Though a comprehensive presentation of this subject matter was indicated, the findings of this study gave evidence of some shortcomings in the curriculum. Most of these could be remedied without making any radical changes. More time and emphasis should be given to home equipment and conveniences, school lunches, food preservation in the home, simple family meal service, variety in methods of cooking the protective foods, and use of low cost foods and those produced at home. More provision for practice by the girls at school and at home should be made for planning, preparing and serving family meals that could be done at home, improving food habits, planning, preparing, packing and eating school lunches, preserving food for home use, and caring for the kitchen and its equipment. New methods and devices should be introduced to increase the girls' interest and participation in school and home activities that help improve their food practices and those of their families.

The situation that existed in regard to the lunches of the girls was such that the needed improvement would require more than providing the girls with instruction in foods pertaining to school lunches. Evidence of this was shown by the following facts: 65 per cent of the girls ate their lunches away from home; most of the lunches were of very poor quality; practically no improvement was made in the lunches during the study; and all of the girls had received instruction regarding school lunches. Therefore, the high school administration should assume some responsibility for making possible better school lunches.

Instruction pertaining to foods was needed by the parents of the girls. There was evidence that the girls' knowledge of foods was far ahead of the practices in the homes. The girls knew more about the foods they should eat than they were able to put into practice in their homes. All of the girls planned much better meals at school than they ate at home. Some plan should be evolved whereby instruction in foods would be made possible for at least the adult women of the families. In this way the high school instruction in foods would be strengthened and made to function better in the lives of the girls.

ACKNOWLEDGMENT

Appreciation is expressed to Professor Lucile Osborn Rust of the Department of General Home Economics and the Department of Education for her interest and guidance during the preparation of this thesis and to the girls of McCune Rural High School who cooperated in this study.

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APPENDIX

Check List

A Comparison of a Foods Curriculum with the Food Practices of a Selected Group of High School Girls

1. Name ______________________ 2. Age ____ 3. Grade ______

4. Do you live in town or country? __________

5. What is the occupation of your father? __________

6. Family members living at home:

   Father _____ Mother _____

   Ages of brothers: 1. ____ 2. ____ 3. ____ 4. ____ 5. ____

   Ages of sisters: 1. ____ 2. ____ 3. ____ 4. ____ 5. ____

   Check other members living with your family:

   Grandmother _____ Uncle _____ Others: (Indicate whom)

   Grandfather _____ Cousins ____ ______________________

   Aunt _____ ______________________

7. Check the grades in which you studied foods:

   7th ____ 8th ____ Freshman ____ Sophomore ____ Junior ____

8. Have you carried any foods projects in 4-H Club? ____

   If so, what were these foods projects? ______________________

   ____

9. Check the foods produced in your home:

   Beef _____ Fruit _____ Pork _____ Other foods:

   Cheese ____ Milk _____ Poultry _____ ______________

   Butter ____ Mutton ____ Vegetables ____ ______________

   Eggs ____

10. If canning was done in your home last summer, check the number of quarts of each:

	Fruit	Jams, Preserves	Meat	Vegetables	Pickles
Practically none	____	____	____	____	____
50 or less	____	____	____	____	____
50 to 100	____	____	____	____	____
More than 100	____	____	____	____	____

11. Does your family rent a storage locker? ____

12. How much food was put in the storage locker?

Fruit ______ pounds
Meat ______ pounds
Poultry ______ pounds
Vegetables ______ pounds

13. Which of the following equipment do you have in your home?

Built-in cupboards ____
Coal stove ____
Electric coffee maker ____
Electric mixer ____
Electric stove ____
Electric roaster ____
Electric toaster ____
Gas stove ____
Ice refrigerator ____
Mechanical refrigerator ____
Oil stove ____
Oven regulator ____
Pressure cooker ____
Sink in kitchen ____
Waffle iron ____
Water in kitchen ____
Other equipment: __________
____

14. How many loaves of bread does your family make per week? ____; how many loaves does your family buy per week? ____

15. Check the following:

	Breakfast	Dinner	Supper
Family usually eats in the kitchen	____	____	____
Family usually eats in breakfast nook	____	____	____

	Breakfast	Dinner	Supper
Family usually eats in dining room	____	____	____
Family usually eats together	____	____	____

16. Which of these practices do you have in your home when serving a meal?

All food set on the table and passed ____

All food set on the table and passed except the dessert which is brought in ____

Father serves the meat and vegetables ____

Mother serves the meat and vegetables ____

Daughter waits on the table ____

Father serves the meat and other foods are passed ____

Mother serves the meat and other foods are passed ____

Food placed on the plate in the kitchen and plates set at the members' places at the table ____

Father carves the meat at the table ____

Mother carves the meat at the table ____

17. How does your family usually prepare these foods:

Meat:	Potatoes:	Other Vegetables:	Eggs:
Braised ____	Baked ____	Baked ____	Boiled ____
Fried ____	Boiled ____	Boiled ____	Creamed ____
Pan broiled ____	Creamed ____	Creamed ____	Fried ____
Roasted ____	Fried ____	Fried ____	Poached ____
Oven broiled ____	Mashed ____		Scrambled ____
			Hard cooked ____
			Soft cooked ____
			In other foods ____

18. Check the frequency with which these foods are served in your family meals:

	Every Meal	Twice Daily	Once Daily	3-5 times Weekly	Once Weekly	Seldom Never
Cheese	____	____	____	____	____	____
Milk	____	____	____	____	____	____

	Every Meal	Twice Daily	Once Daily	3-5 times Weekly	Once Weekly	Seldom Never
Citrus fruits	______	______	______	______	______	______
Other fresh fruits	______	______	______	______	______	______
Cooked or canned fruit	______	______	______	______	______	______
Dried fruit	______	______	______	______	______	______
Tomato, canned or fresh	______	______	______	______	______	______
Potatoes	______	______	______	______	______	______
Green, leafy or yellow vegetables	______	______	______	______	______	______
Other vegetables	______	______	______	______	______	______
Whole grain cereal	______	______	______	______	______	______
Whole wheat bread	______	______	______	______	______	______
Chicken	______	______	______	______	______	______
Eggs	______	______	______	______	______	______
Meat	______	______	______	______	______	______
Liver	______	______	______	______	______	______
Butter	______	______	______	______	______	______
Fish	______	______	______	______	______	______

19. Which of the above foods are not used in the family meals?

________________________________ ______

________________________________ ______

________________________________ ______

________________________________ ______

________________________________ ______

Place the number of the reason your family does not use the food opposite the name of the food.

Reasons:

1. Difficult to obtain.
2. Disliked by some or all of your family.
3. Food customs of your family.
4. Food allergies of some or all of your family.
5. Health of some or all of your family.
6. Religion prohibits.
7. Sell the food.
8. Time of preparation.
9. Too expensive.
10. Other reasons: ________________________________

____

20. How much milk is used by your family per day? Fresh milk ____ qts.; canned milk ____ tall cans; dried milk ____ pounds.

21. What kind of dessert served with your family meals?

	Occasionally	Usually	Never
Cake	____	____	____
Cookies	____	____	____
Custards and puddings	____	____	____
Fruit, fresh	____	____	____
Fruit, canned	____	____	____
Fruit, dried	____	____	____
Gelatin	____	____	____
Ice cream	____	____	____
Pie, one crust	____	____	____
Pie, two crust	____	____	____
Others:			
____	____	____	____
____	____	____	____

22. Check the forms of entertaining done in your home:

	Frequently (twice monthly)	Occasionally (3-6 times yr.)	Never
Company for meals	____	____	____
Refreshments for parties, clubs, or guests	____	____	____

23. If you have company in your home for meals or refreshments, what is your responsibility?

	Meals		Refreshments	
	Alone	With help	Alone	With help
Planning food	____	____	____	____
Preparing food	____	____	____	____
Setting table	____	____	____	____
Washing dishes	____	____	____	____
Cleaning away food	____	____	____	____

24. If you have guests for refreshments, what do you usually serve? (Place on a line, the combination of food you serve.)

____

____

____

____

____

25. How does your company dinner differ from regular family dinners?

More food ____
Different food ____
  Father serves food ____
  Filled plates brought in from kitchen ____
  Mother serves food ____
  Food served cafeteria style ____
  Food placed on table, guests help themselves ____
  Buffet service used ____
Different china and silver ____
Different table linen ____
Flowers on table ____
All eat at one table ____
Eat at different tables ____
Some one waits on table ____

26. What are your usual responsibilities in the care of the kitchen?

Care for the garbage ____
Clean cupboards ____
Clean refrigerator ____
Clean sink ____
Clean stove ____
Clean woodwork ____
Dry dishes ____
Keep the shelves in order ____
Mop floor ____
Rearrange shelves ____
Put away dishes ____
Put away food after meal ____
Store canned food ____
Sweep floor ____
Wash dishes ____

27. Which of the above tasks do you dislike to do?

____

____

28. Why do you dislike to do them?

____

____

____

____

29. Do you eat breakfast daily ____; occasionally ____; never ___?

30. If you occasionally or never eat breakfast, check the reason:

Have home duties to do before the bus comes ____
Don't get up in time ____
Not hungry ____
Want to be thin ____
Other reasons: ______________________________

____

31. If you usually eat breakfast, check the foods that generally make up your breakfast:

Bacon ____
Bread ____
Cereal ____
Cocoa ____

Coffee ____
Eggs ____
Fruit ____
Meat ____

Milk ____
Pancakes ____
Potatoes ____
Toast ____

Other foods:
____
____
____

32. Do you usually bring your lunch from home ____; buy it at one of the cafes ____; go home ____; home of friend or relative ____?

33. If you usually buy your lunch, check the foods you generally buy:

Candy bar ____
Chili ____
Coca Cola ____
Cocoa ____

Hamburger ____
Ice cream ____
Milk ____
Plate lunch ____

Pie ____
Salad ____
Sandwich ____
Soup ____

Other foods:
____
____
____

34. If you bring your lunch from home, check the foods you usually have in your lunch:

Cake ______
Cookies ______
Fruit, fresh ______
Fruit, canned ______
Fruit juice ______
Milk ______
Pickles ______
Pie ______

Sandwiches: ______
Chicken ______
Cheese ______
Egg ______
Fruit ______
Meat ______
Peanut butter ______
Sweet ______

Soup ______
Other foods:
____
____
____
____
____
____

35. If you eat at home or bring your lunch, do you buy a candy bar at noon, frequently ____; occasionally ____; never ____?

36. How much milk do you drink a day? _____ qts.

37. In what other ways do you use milk?

	Daily	3-5 times week
Creamed foods	______	______
Custards	______	______
Gravies	______	______
Ice cream	______	______
Soup	______	______
Other foods:		
____________________	______	______
____________________	______	______

38. Do you eat between meals regularly ____; occasionally ____; never ____?

39. If so, what do you eat between meals?

Apple ______
Cake ______
Cookies ______
Coca Cola ______

Fruit juice ______
Milk ______
Oranges ______
Sandwich ______

Candy ______
Other foods:
____
____

40. Do you like to try new foods which you have never tasted? _____ If so, what foods have you learned to like?

________________ ________________ ________________

________________ ________________ ________________

41. Check the part you had in the canning of food this summer:

	Alone	With help
Prepared vegetables		
Canned vegetables		
Prepared fruit		
Canned fruit		
Made jelly		
Made pickles		
Made preserves, jams		

42. What responsibilities do you have for the following?

	Alone			With help		
	Frequently	Occasionally	Always	Frequently	Occasionally	Always
Plan meals:						
Breakfast						
Dinner						
Supper						
Prepare meals:						
Breakfast						
Dinner						
Supper						
Waiting on table:						
Breakfast						
Dinner						
Supper						
Set table:						
Breakfast						
Dinner						
Supper						
Cleaning after meals:						
Breakfast						
Dinner						
Supper						
Preparing food for parties						
Serving food for parties						
Preparing food for company dinners						
Serving food for company dinners						
Prepare vegetables						

	Alone			With help		
	Frequently	Occasionally	Always	Frequently	Occasionally	Always
Cook cereals						
Pack lunch						
Buy food:						
Canned food						
Fruit						
Meat						
Vegetables						
Prepare food for little children						
Help little children learn to eat						
Dress chicken						
Make biscuits						
bread						
cakes						
candy						
cocoa						
coffee						
cookies						
griddle cakes						
muffins						
pies						
salads						
Prepare desserts						
Care for left-overs						

Record of Food Eaten

Name ____ Date ______________

Food	Amount	Water	Food eaten between meals
Breakfast:			
Lunch or dinner:			
Supper:			

Menu Plan

Plan a day's menu for yourself that you consider is good. Include water and other liquids for the entire day. List any other foods that you would like to have during the day.

Breakfast:

Lunch or dinner:

Supper:

Score Card for Judging Food Records and Planned Menus

Adapted from Nutrition
Chaney and Ahlborn

Milk--2 cups or more	15
1 cup--10	
Vegetables--other than potatoes at least twice	5
1 leaf, green yellow	5
1 raw	5
Fruits--twice or more	10
once--5	
including orange, grapefruit, tomatoes	5
Meat, fish, poultry	10
Eggs--one	5
Whole grain cereal--twice	10
Butter in addition to above 2 tablespoons	10
Water or other fluid 8 glasses	10
6 glasses--5	
No food between meals except fruit or milk	10
Deduct:	
10 for no breakfast	
10 for more than 1 cup coffee, tea, coca cola	
Score	100